Paper No. 10

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte OLE K. NILSSEN

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Appeal No. 1998-1288
Application No. 08/502,817

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ON BRIEF

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Before JERRY SMITH, FLEMING, and BARRY, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-6, 12 and 13, which constitute all the claims remaining in the application.

The disclosed invention pertains to a circuit arrangement for providing electrical power to a gas discharge lamp such as a fluorescent tube.

Representative claim 1 is reproduced as follows:

1. An arrangement comprising:

a source providing an alternating voltage across a pair of source terminals; the alternating voltage having a fundamental frequency distinctly higher than that of the AC voltage on an ordinary electric utility power line;

a series-combination of an inductor and a capacitor; the series-combination being: (i) naturally resonant at a frequency lower than said fundamental frequency, (ii) effectively connected across the source terminals, thereby to draw a source current from the source terminals, and (iii) connected in circuit with a pair of output terminals across which is provided an approximately sinusoidal output voltage; the inductor being coupled with an auxiliary winding, thereby to cause an auxiliary voltage to be provided from this auxiliary winding; the coupling between the inductor and the auxiliary winding being sufficiently loose so that, in case an electrical short circuit were to be placed across the auxiliary winding, the magnitude of the source current would be prevented from increasing to a detrimentally high level; and

a gas discharge lamp means having a first thermionic cathode with a pair of cathode terminals connected with the auxiliary winding by way of a connect means; the lamp means also having a second thermionic cathode; the approximately sinusoidal output voltage being applied between the first and the second thermionic cathodes.

The examiner relies on the following references:

Warren	2,333,499	Nov. 02, 1943
Cates et al. (Cates)	2,339,051	Jan. 11, 1944
Cox	3,691,450	Sep. 12, 1972
Zansky	4,370,600	Jan. 25, 1983

Claims 1-6, 12 and 13 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Zansky in view of Cox with respect to claims 1, 2, 12 and 13, and the examiner adds Cates and Warren to this combination with respect to claims 3-6.

Rather than repeat the arguments of appellant or the examiner, we make reference to the brief and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellant's arguments set forth in the brief along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the invention as set forth in claims 1-6, 12

and 13. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467
(1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie

case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976).

We consider first the rejection of claims 1, 2, 12 and 13 based on the teachings of Zansky and Cox. These claims stand or fall together, and we will consider claim 1 as the representative claim. The examiner asserts that Zansky teaches an auxiliary winding loosely coupled to the resonant inductor of an electronic ballast for gas discharge tubes. According to the examiner, the only feature of claim 1 not taught by Zansky is the setting of the operating point at something other than the resonant point. The examiner asserts that it is well known to operate on either side of the resonant point as allegedly taught by Cox (and

others). The examiner concludes that it would have been obvious to move the operating point in Zansky as taught by Cox (answer, pages 4-5).

Appellant makes the following arguments: 1) appellant argues that Zansky does not teach a loosely coupled auxiliary winding coupled with a resonant inductor; 2) appellant argues that the examiner has provided no logical basis to move the operating point of Zansky or that Zansky's circuit could be improved by such modification; and 3) appellant argues that the inverter circuits of Zansky and Cox are substantially different and there is no basis for combining features from these two incompatible circuits (brief, pages 3-6). The examiner responds that the "looseness" of the coupling between the inductor and the auxiliary winding involves only routine skill in the art. The examiner also responds that the operating point is a matter of design choice (answer, pages 7-9).

We agree with the position argued by appellant. The examiner has failed to establish a prima facie case of obviousness. Nowhere does Zansky disclose that the auxiliary windings of his ballast circuit are loosely coupled to the

inductor. The examiner bases his position on nothing more than a perceived inherent property of the (gapped) magnetic core 47 of Zansky. A prima facie case of obviousness is not established by mere conjecture of the examiner. The claims also recite a specific property of the loose coupling which the examiner has dismissed as routine skill of the artisan. The obviousness of the specific property recited in appellant's claims also cannot be met by the mere conjecture of what the examiner deems to be obvious. The examiner has failed to provide us with an evidentiary record which clearly supports the obviousness rejection.

We also agree with appellant that the examiner has not supported his position that it would have been obvious for the series-combination of an inductor and a capacitor to be naturally resonant at a frequency lower than the fundamental frequency of the gas discharge lamp. Zansky discloses a ballast circuit operating at a resonant frequency equal to the fundamental frequency. The examiner has pointed to no specific portion of Cox, and we have found none, which suggests that the Zansky ballast circuit would be improved by having the resonant frequency lower than the fundamental

frequency. The modification of Zansky by Cox as proposed by the examiner is not suggested by the collective teachings of these references.

Therefore, we do not sustain the examiner's rejection of claims 1, 2, 12 and 13 based on the collective teachings of Zansky and Cox.

We now consider the rejection of claims 3-6 based on the collective teachings of Zansky, Cox, Cates and Warren. Although these claims do not have the loosely coupled recitation of claim 1, they do recite the feature of the naturally resonant frequency of the series connection of the inductor and the capacitor being less than the fundamental frequency of the alternating voltage. Cates and Warren were cited by the examiner to meet additional recitations of these claims directed to a current limiting means connected between the auxiliary winding and the gas discharge lamp. In addition to the arguments considered above, appellant argues that there is no motivation to modify the circuit of Zansky with the teachings of Cates and Warren and no benefit to the Zansky circuit would result therefrom (brief, pages 6-7).

As noted above, we fail to find any teachings in the

Zansky and Cox references which would have suggested to the artisan that the series combination of the inductor and the capacitor of Zansky should be naturally resonant at a frequency lower than the fundamental frequency of the alternating voltage. Cates and Warren do not overcome this deficiency in the basic combination of references. Therefore, we also do not sustain the examiner's rejection of claims 3-6 based on the collective teachings of Zansky, Cox, Cates and Warren.

In summary, we have not sustained either of the examiner's rejections of the appealed claims. Therefore, the decision of the examiner rejecting claims 1-6, 12 and 13 is reversed.

REVERSED

JERRY SMITH Administrative Patent Judge	)	
MICHAEL R. FLEMING Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
LANCE LEONARD BARRY Administrative Patent Judge	)	

JS:hh

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